Windows Driver Guide

(Windows 2000 or later, Installer version)

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Revision history

Date	Version	Details
05/08/01	050420 (V1.00)	This document is released
05/09/01	050901 (V1.40)	CT-S280 driver is added. FontAxx / FontBxx are added to CD-S500 series driver The problem with longer data than full column is corrected. Fewer columns problem with Font 15cpi Size 80 is corrected. The problem with mixed font lines between printer font and TrueType font is corrected. The problem with custom size paper for CT-S300 is fixed.
05/11/16	051116 (V1.51)	CT-S2000 driver is added
06/1/28	V1.53	Printing garbage problem with parallel I/F is fixed. High resolution CD-S500 graphic printing problem is fixed. CD-S500 longer than full column printing problem is fixed.
06/7/30	V1.56	Automatic line feed is added to the end of CT-S280 printing. The problem of feed length after barcode printing is fixed. The problem of divided TrueType font is fixed. The print speed down by above change is improved. Graphic print method of CT-S300 is changed. CT-S4000 driver is added.
07/3/20	V1.57	Another problem of feed length after barcode printing is fixed. Problem of unstable character size is fixed. CT-S4000 Label driver is added. BD2-2220/2221 is added. "Printer Features" function is added to print in fixed length. Drivers are adapted to Windows Vista Euro mark problem is solved.
07/04/30	V1.57a	CT-S310 driver is added PMU2xxx driver is added.
07/11/26	V1.581	64 bit drivers are available. Installer version is available. CT-S2000Label is added. CT-S4000 Compress driver is added. Partial cut is added to Cut method of PMU-2xxx NV logo transaction by ESC (L can be chosen for CT-S2000/4000/PPU700 Graphic print method of CT-S280 is changed. The problem of printing some Unicode characters is fixed. The width information of FontA88 is corrected. The width information of 6.25cpi and 48point is corrected. The problem of wrong position logo by multiple page printing is fixed. Problem of wrongly printed printer font at the end of page is fixed. The problem of paper length by multiple page of upside down printing is fixed.
08/07/02	1.582	Installing/Uninstalling driver becomes easier by the driver installer. POS Printer Utility can be called from [Tool] property of driver. File transfer function is added to [Tool] property of driver Strange print position problem of printer font with UpsideDown function is fixed. Missing last vertical dot-line problem in high quality graphic printing is fixed. Actual printing area for CD-S500series is expanded. The problem of white gap in horizontal direction printing is fiexed.(This solution requires firmware upgrade as well. Applicable model is CT-S2000, CT-S4000, CT-S310 and succeeding models.) The command for cut for CT-S300 & 310 is changed from GS V to ESC i, ESC m. Font Bxx size of CT-S2000/4000/S28x/BD2-2xxx/PMU-2xxx/CBM1000II is corrected. CT-S281 driver is added. The problem of not printed last line data on label driver is fixed.
08/12/25	1.582a	The problem of white gap in horizontal direction causes garbage printing with old version CT-S310 firmware. So the function was removed from CT-S310 driver.
09/04/08	1.583	CT-S281L driver is added. Custom paper definition in GPD file is changed as follows. Deleted left margin (*MinLeftMargin): All models Changed max defined size (*MaxSize): CT-S4000: from (640,32767) to (896,26182) Others from (???,32767) to (???,26182) No change: CT-S500 series Changed minimum defined size (*MinSize): Label type (203,203) Non label type (20,20) PPU700 (203,719) No change: CD-S500series and CT-S4000 compressed. Solution for white gap in horizontal direction is added to CT-S281standard driver. The problem of disappeared button for POS Printer Utility by changing driver name is fixed.

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(3) We tried to ensure the content of this document but if you find any mistakes, please let us know.
(4) Regardless of article 3, we cannot be responsible for any damages/influences caused by the use of this driver.
(5) If you do not agree any of above, you are not allowed to use the driver.

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1. Operating system

Citizen Systems drivers are designed to work on any of following operating systems.

Microsoft Windows 2000 (SP4 or later)
Microsoft Windows XP
Microsoft Windows Server 2003 （The functions in terminal mode are limited.）
Microsoft Windows Vista

Windows Installer 3.x needs to be installed for driver installation.
(This software is automatically installed by Windows update.)
Windows Installer can be downloaded from following site.

http://www.microsoft.com/downloads/details.aspx?FamilyID=5fbc5470-b259-4733-a914-a956122e08e8&displaylang=en

2. Supported printer models and interfaces.

Drivers for “Citizen Systems” printers are listed as follows.

Thermal printer	CBM1000 Type II	Standard driver
	CBM1000 Type II Label	With label function
	CT-S2000	Standard driver
	CT-S2000 Label	With label function
	CT-S280	No cutter, No drawer
	CT-S281	With cutter, No drawer
	CT-S300	Standard driver
	CT-S300 Black Mark	With black mark function
	CT-S310	Standard driver
	CT-S310 Black Mark	With black mark function
	CT-S4000	Standard driver
	CT-S4000 Label	With label function
	CT-S4000 Compress	1/2 compression
	PMU2xxxx (including Type II)	No drawer
	PPU-700	No drawer
Dot impact printer	CD-S500	No cut function
	CD-S501/503	With cut function
Control Board	BD2-2220/2221	For LT2xxx mechanism

[Note]

* CD-S50x have emulation mode for CBM, Star and ESC/POS. The driver for the model is for ESC/POS mode.
* CD-S501 and CD-S500 use same driver.
* Japanese driver is available separately.

Supported interfaces are

Serial interface

Parallel interface

USB

(If you need to use Ethernet interface, please use non-installer type driver.
Non-installer type driver can be downloaded from our Web site.)

Caution

USB Virtual com driver

If you use CT-S280/PMU2xxx/BD2-222x USB interface model or CT-S2000/4000/310/281/PMU2xxxII with setting for V-COM, USB drivers need to be installed before Windows driver installation. Please refer to the separate manual for USB driver.

Status function

For the driver with the status function (language monitor) to get the changed status of printer, another document is available. Please refer to the document for the function..
Because the driver with status function could make the printing software unstable, if you do not have any demand to use status function, please use the standard driver.

Multiple drivers on one PC

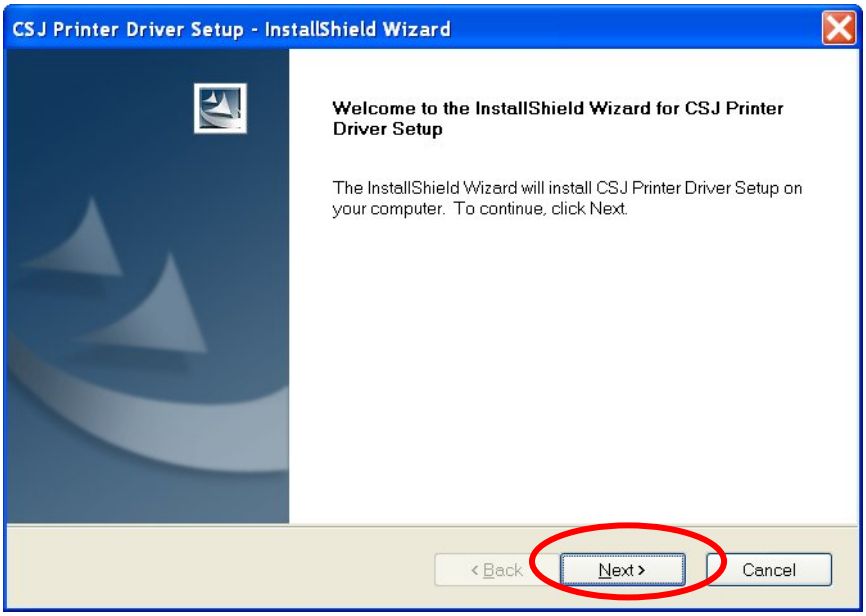
This driver installer does not allow installing more than two same printers to the one PC. If you want to connect multiple same printers to one PC, please use non-installer type driver..

3. Install and uninstall the driver

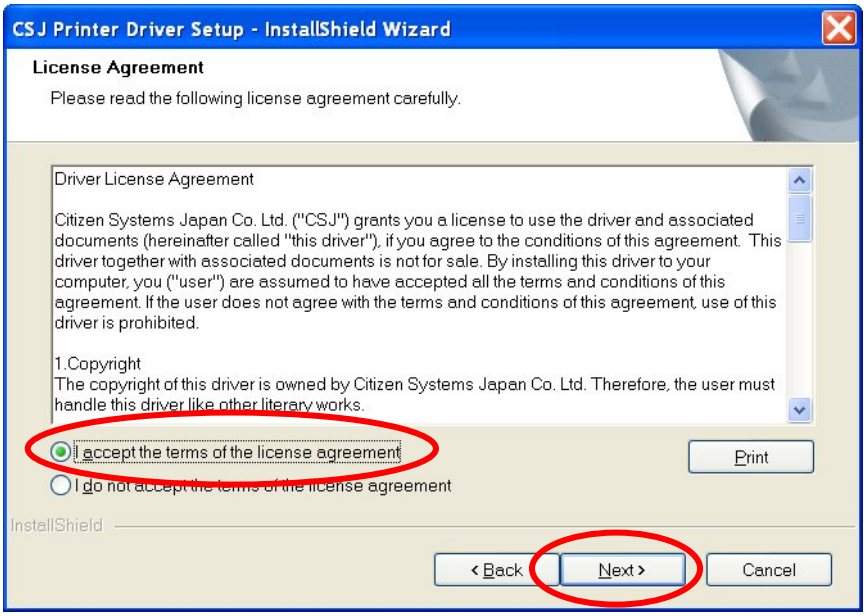
These instructions use Windows XP as the example operating system. Windows 2000, Windows Server 2003 and Vista are similar.
Please uninstall the older drivers prior to the installation.

3-1. Install the driver

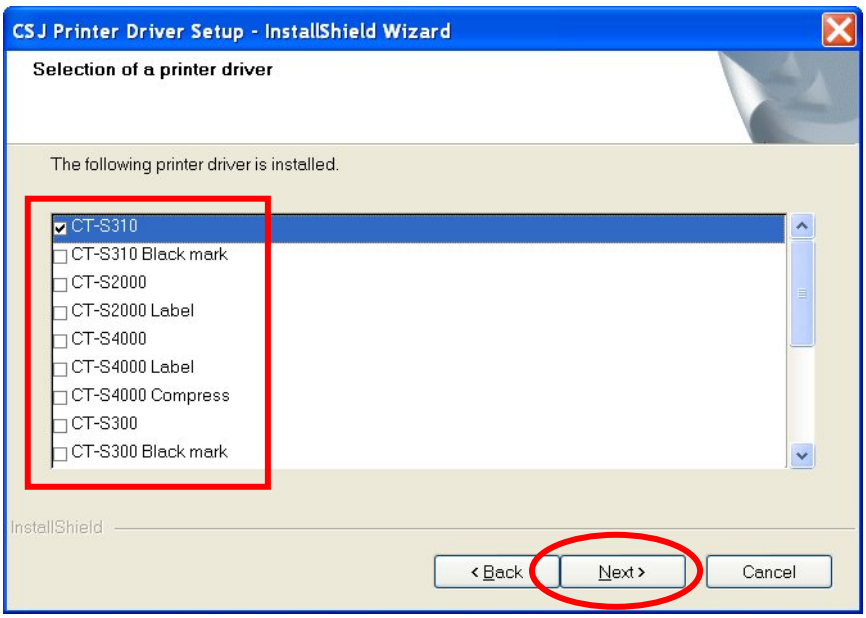
Run the driver installer “Setup.exe”. Welcome window shows up. Press “Next” button.


CSJ Printer Driver Setup - InstallShield Wizard
Welcome to the InstallShield Wizard for CSJ Printer Driver Setup
The InstallShield Wizard will install CSJ Printer Driver Setup on your computer. To continue, click Next.
< Back
Next >
Cancel

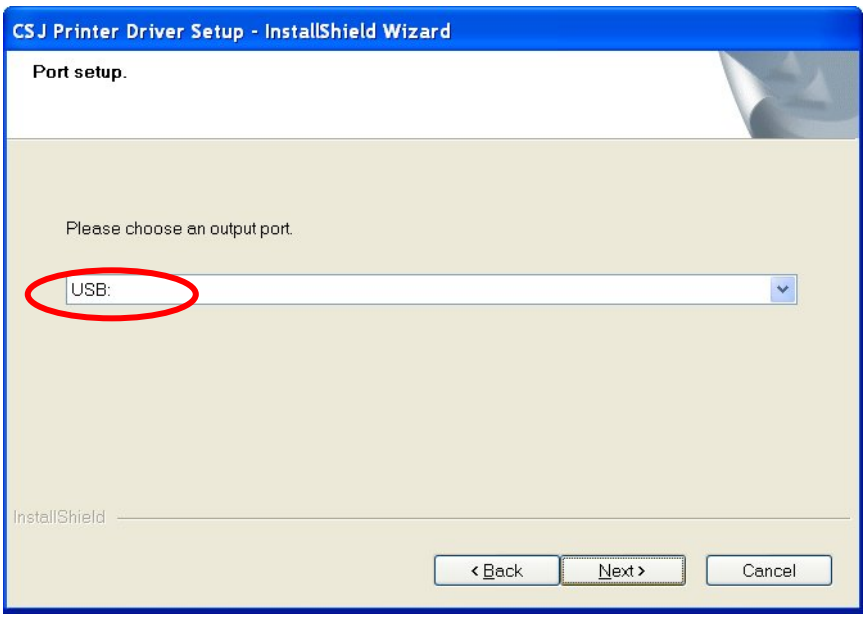
If you can accept the our License Agreement, choose “I accept...” and press “Next”.


CSJ Printer Driver Setup - InstallShield Wizard
License Agreement
Please read the following license agreement carefully.
Driver License Agreement
Citizen Systems Japan Co. Ltd. ("CSJ") grants you a license to use the driver and associated documents (hereinafter called "this driver"), if you agree to the conditions of this agreement. This driver together with associated documents is not for sale. By installing this driver to your computer, you ("user") are assumed to have accepted all the terms and conditions of this agreement. If the user does not agree with the terms and conditions of this agreement, use of this driver is prohibited.
1.Copyright
The copyright of this driver is owned by Citizen Systems Japan Co. Ltd. Therefore, the user must handle this driver like other literary works.
I accept the terms of the license agreement
I do not accept the terms of the license agreement
Print
InstallShield
< Back
Next >
Cancel

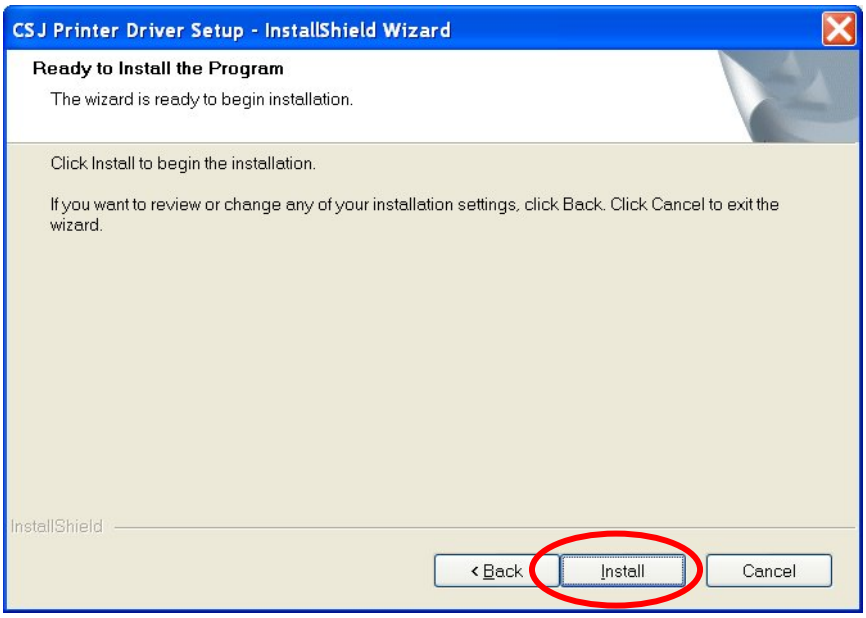
Choose the model to install the driver for.
You can choose only 1 model here.



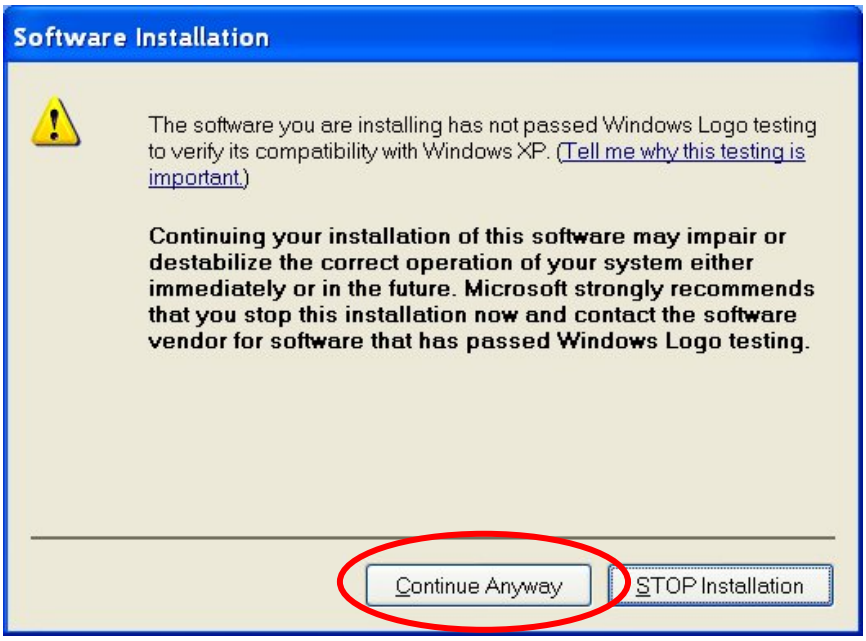
Choose the interface to connect the printer.



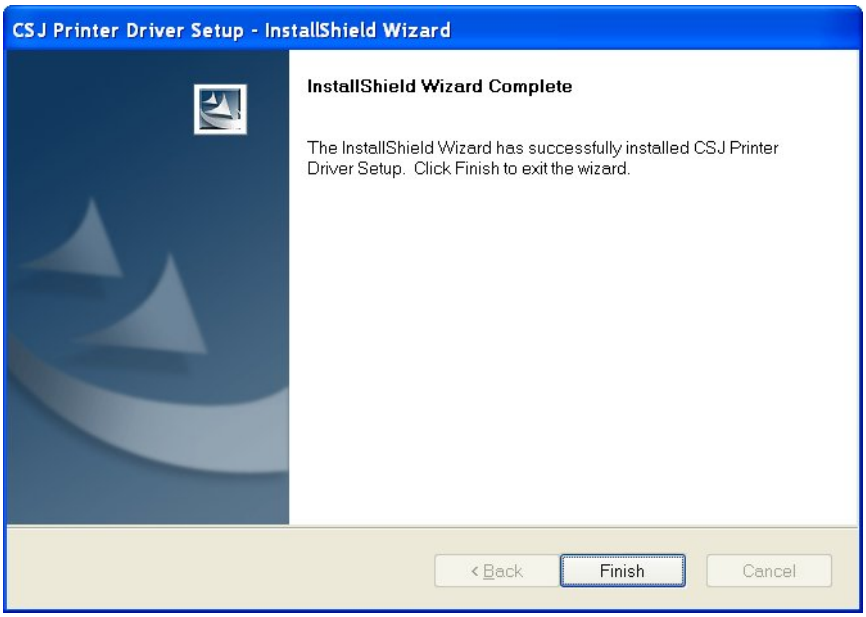
Actual installation starts by pressing “Install”.


CSJ Printer Driver Setup - InstallShield Wizard
Ready to Install the Program
The wizard is ready to begin installation.
Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
InstallShield
< Back
Install
Cancel

This kind of warning may show up once or twice.
Please press “Continuous Anyway” on this screen.

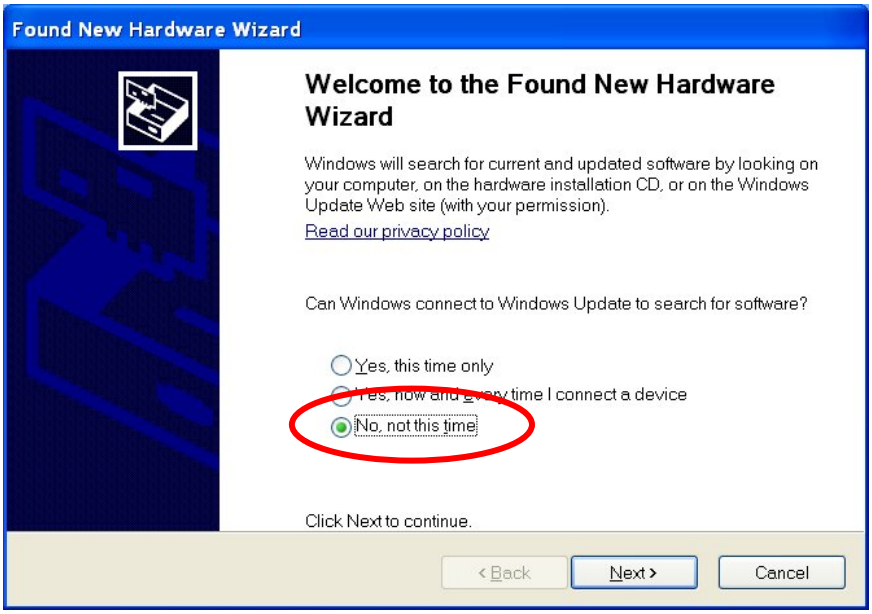

Software Installation
The software you are installing has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the software vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

The installation is finished.

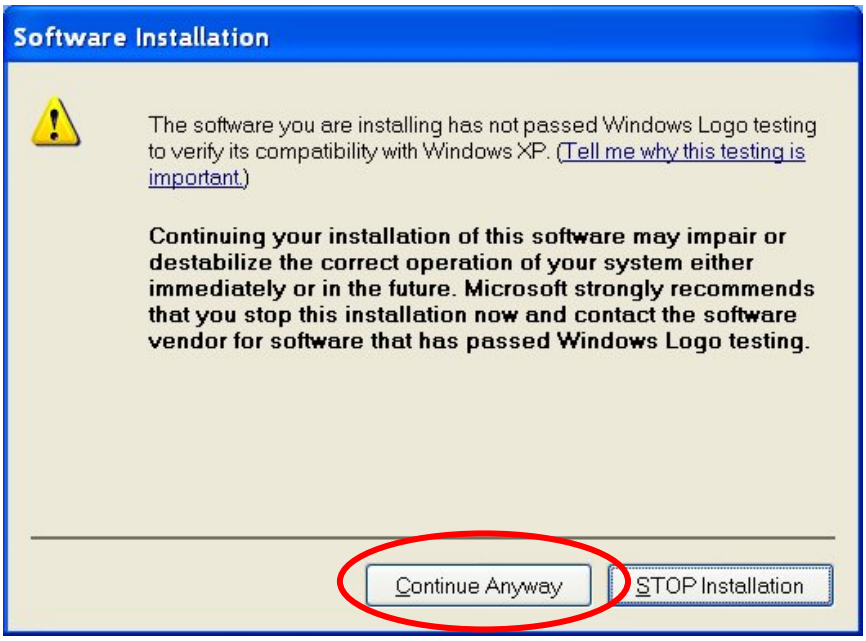

CSJ Printer Driver Setup - InstallShield Wizard
InstallShield Wizard Complete
The InstallShield Wizard has successfully installed CSJ Printer Driver Setup. Click Finish to exit the wizard.
< Back
Finish
Cancel

If the interface is serial, these steps finish the installation.
If the interface is USB or parallel, when the printer is connected to the PC, following additional steps automatically starts.

Choose “No, not this time” here.


Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission).
Read our privacy policy
Can Windows connect to Windows Update to search for software?
Yes, this time only
Yes, now and every time I connect a device
No, not this time
Click Next to continue.
< Back
Next >
Cancel

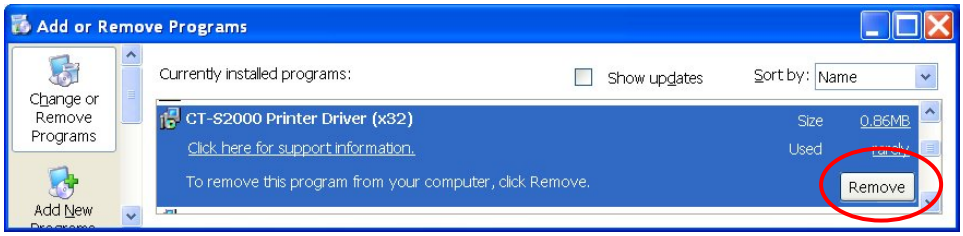
This kind of message shows up. As this driver does not have any problem, please go ahead by pressing “Continue Anyway” button.

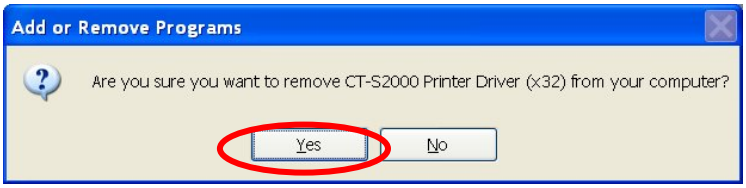

Software Installation
The software you are installing has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the software vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

Then installation is finished with the message of “Finish”.
Please check if the driver is added in “Printers and Faxes” windows.

3-2. Uninstall the driver

If the driver is installed by this way, driver appears in “Add or Remove Programs” of “Control Panel”. To remove the driver, please press “Remove” button.
When this message shows up, please press YES to proceed with the driver uninstall.





3-3. Remarks for the driver installation

1. Please make sure that the communication condition of serial interface matches between PC and printer.
2. This installer does not allow multiple driver installation for same model on one PC.
   If you need to install multiple same drivers on one PC, please contact us.
3. If the old driver installed without installer exists on the PC, the installer does not install the new driver on the PC. Please delete the old driver prior to the installation.
   Steps to delete the old driver
   On the "Printers and Faxes” windows, choose the diver and delete it.
   And on the menu of “Printers and Faxes”,
   File => Server Properties => “Drivers” tab
   Then you see the list of installed drivers. Choose the driver and press “Delete” button.
   (A tool to delete drivers can be supplied. Please contact us for the tool.)

4. DIP/Memory switch setting of printer and port settings of Windows

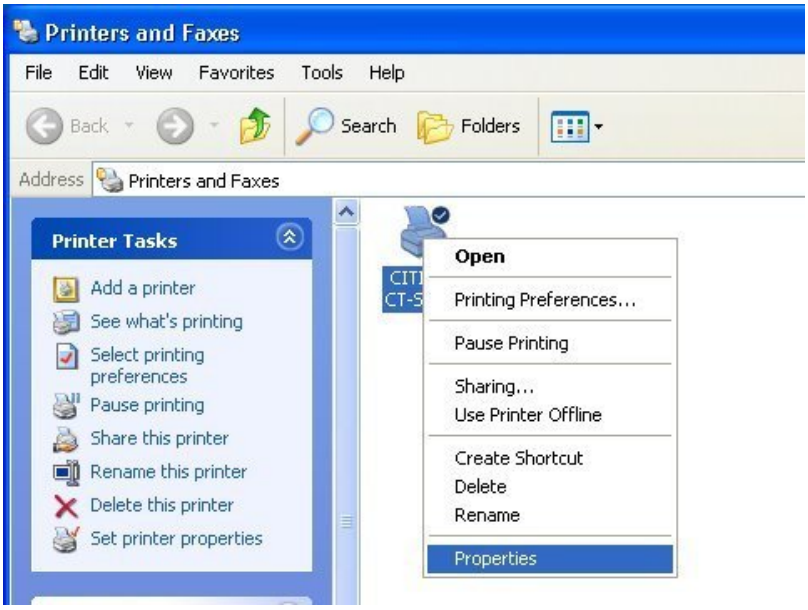
The printer drivers are designed to work with the factory default settings for the printer.
To set the printer to the factory default settings please check the printer's users manual.
If you are having trouble with a serial port printer (RS-232) please refer to appendix A.

5. Using the printer

5.1 Printer User Interface

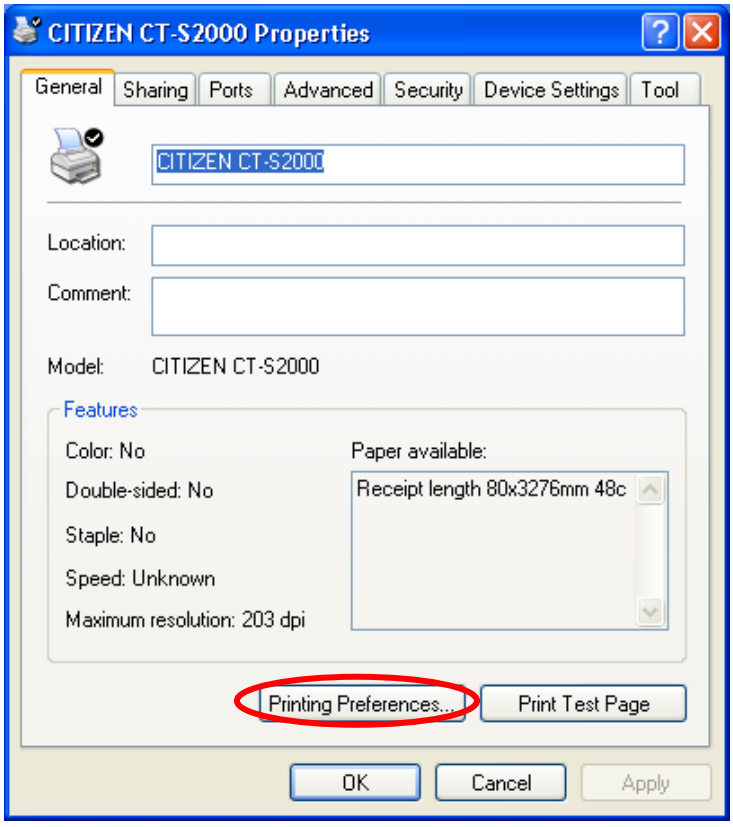
Follow the steps bellow to change the function setting of the printer driver:

Select the printer properties of the printer driver by right clicking on the printer icon.

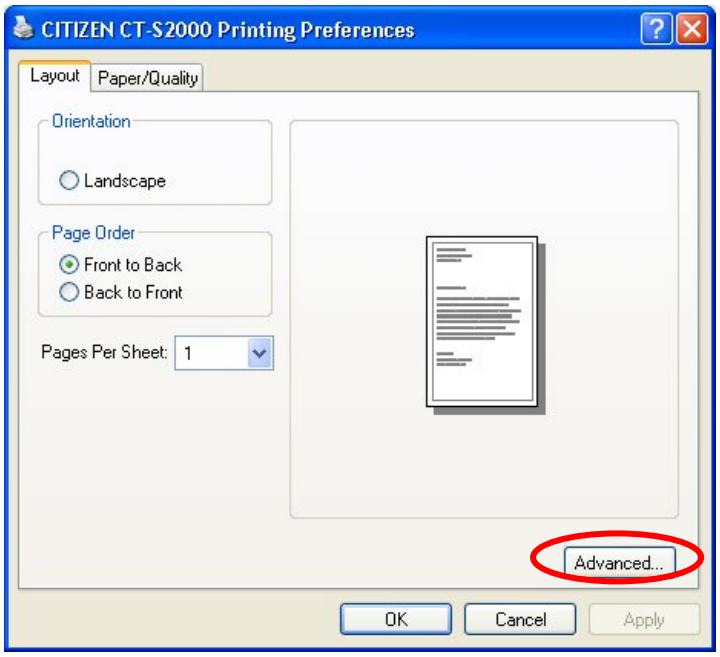


5-1 "General" tab

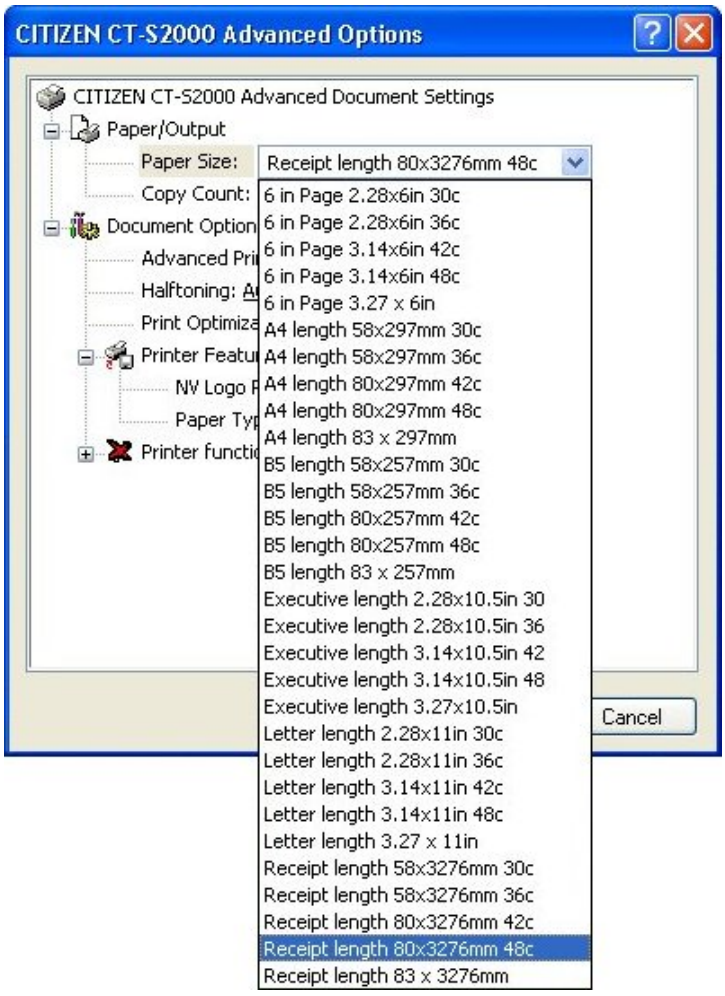
Then press the "Printing Preferences" button in the General Tab.



Then press the “Advanced” button.



There are some items for the printer setting.
Paper size: You can choose the paper size.
Please refer to the explanation of paper width and paper length in this document.

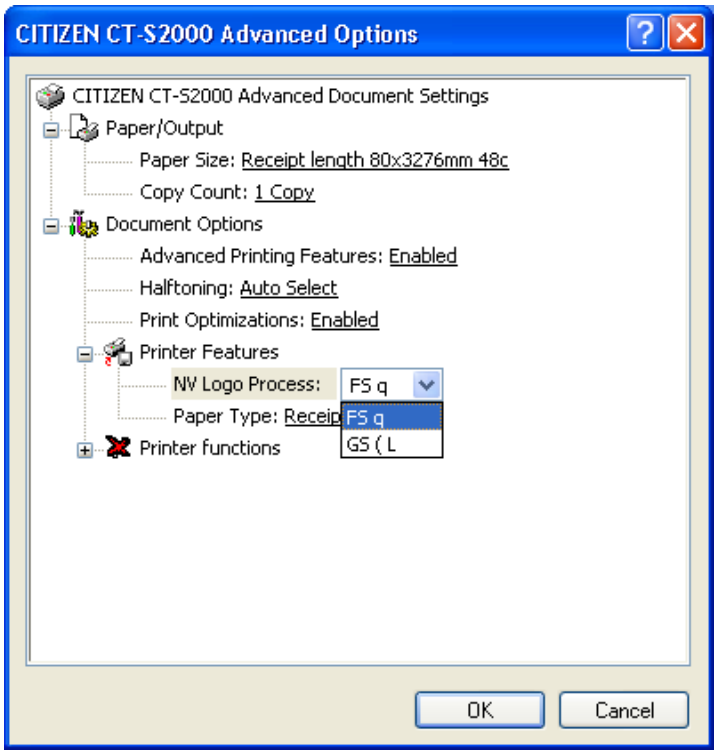


NV Logo process

There are 2 ways for logo registration. Depending on the method, logo printing method is different as well. This setting choose which way should be used.

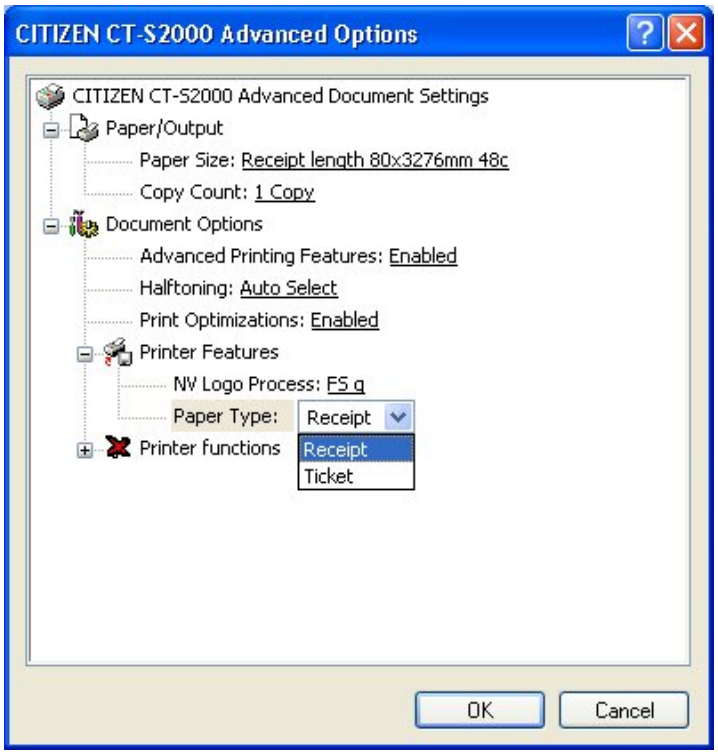
Usually, “FS q” should be OK.

GS (L is supported by CT-S2000/4000/310 only.

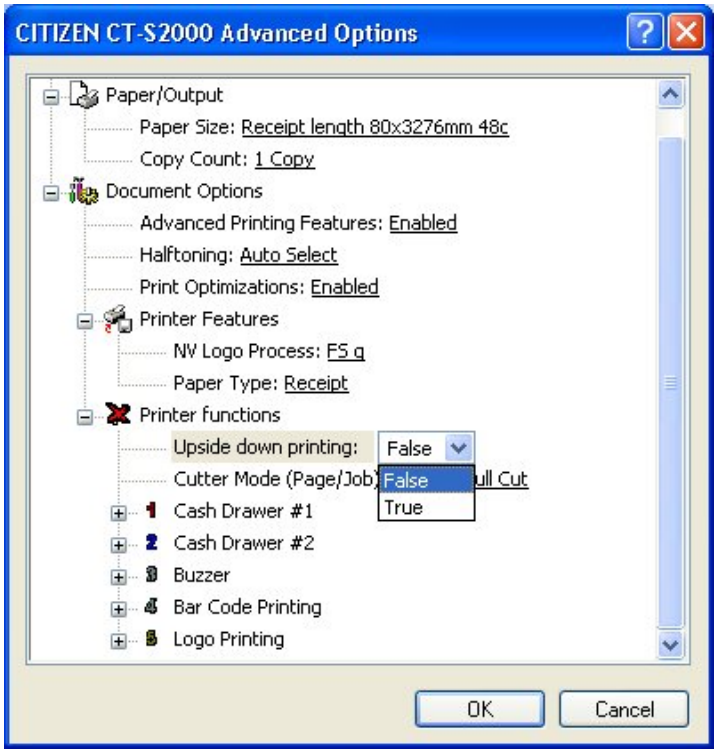


Printer Features: You can choose Receipt or Ticket as paper types. Receipt allows flexible paper length according to the data length. Ticket is for the fixed length.

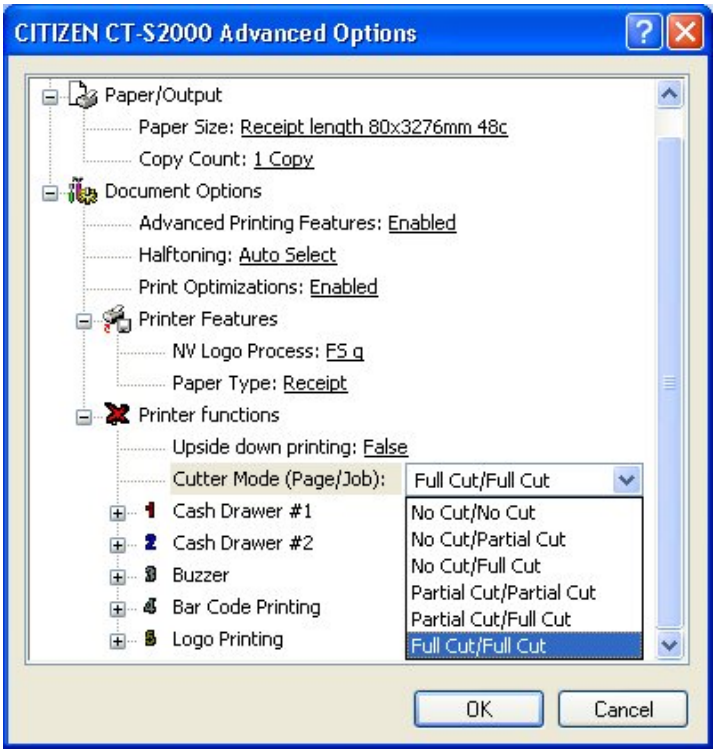
Label version driver does not have this choice.



Open the “Printer functions” selection
Then you will see more items to change the setting of the driver.



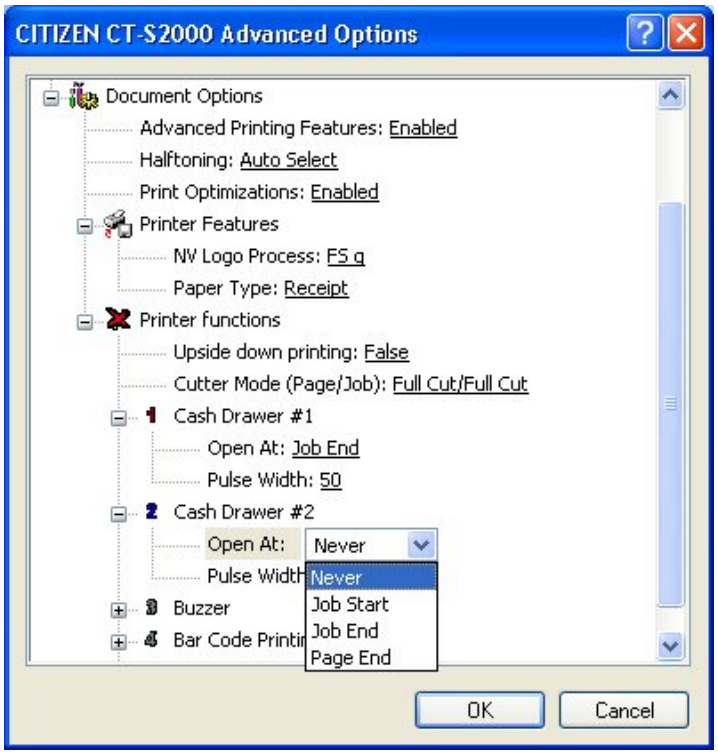
Upside down printing: Allows Upside Down Printing but all print data must be stored in the printer once. Therefore, there is a limitation of data length due to the printer memory size.
Also it takes little time to start printing.



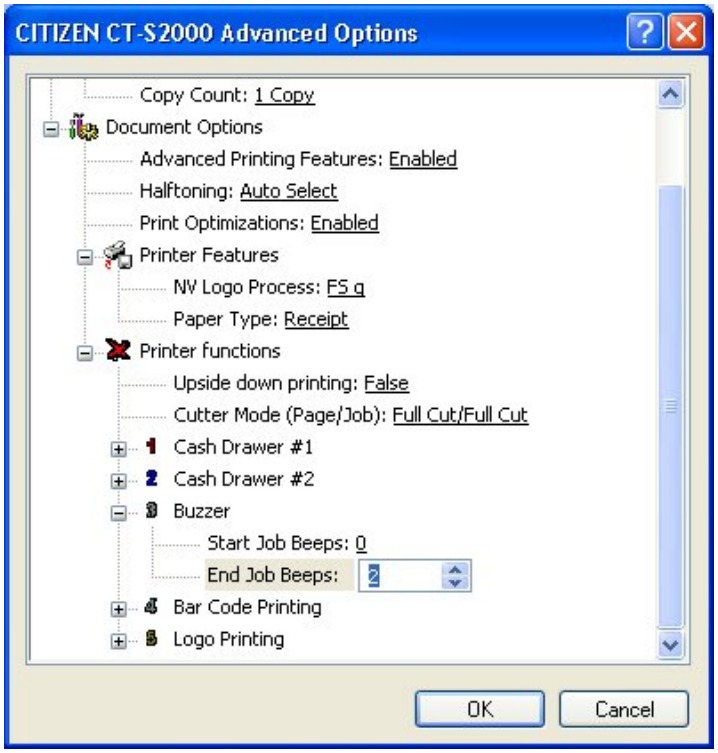
Cutter Mode (Page/Job): Specifies whether what kind of cut should be applied at end of page and end of Job.
The full cut /partial cut/no cut can be chosen but type of cut may be limited by the printer setting.

Cash Drawer: Specifies when Cash Drawer #1 will be opened. The pulse width can be specified to match the cash drawer specifications.

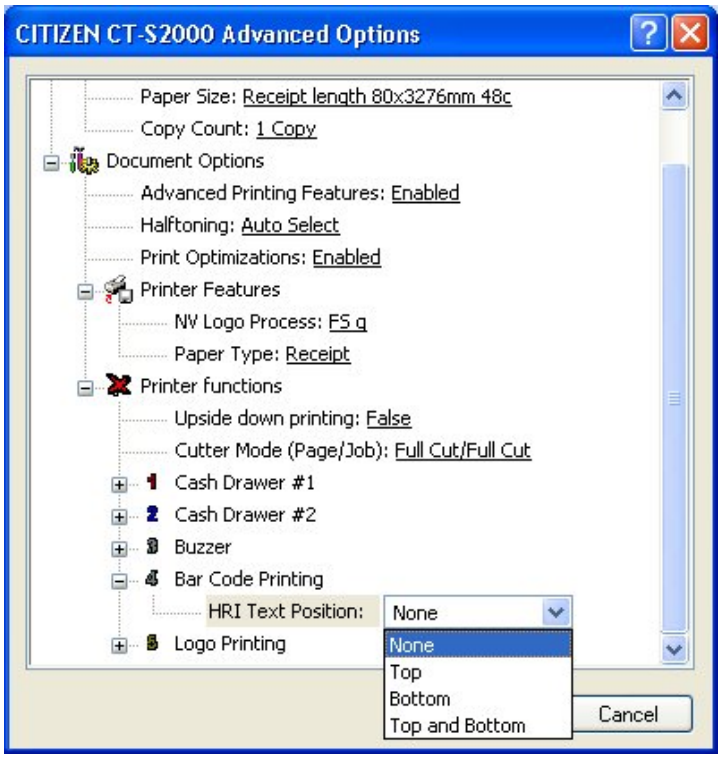
Two cash drawers can be connected to one printer but do not open two cash drawers same time to avoid any trouble.



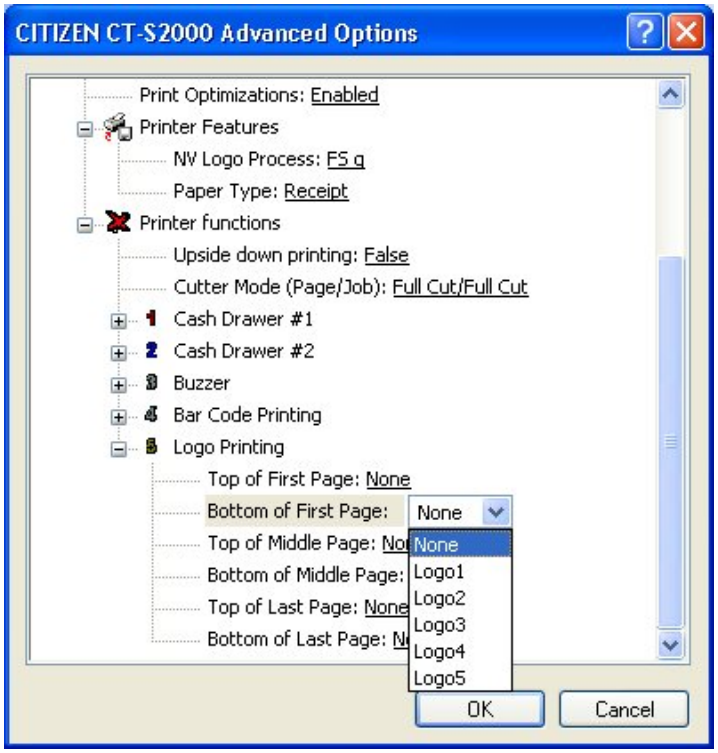
Buzzer: Specifies if the buzzer should be sounded at the beginning or end of the print job and how many times the printer beeps.

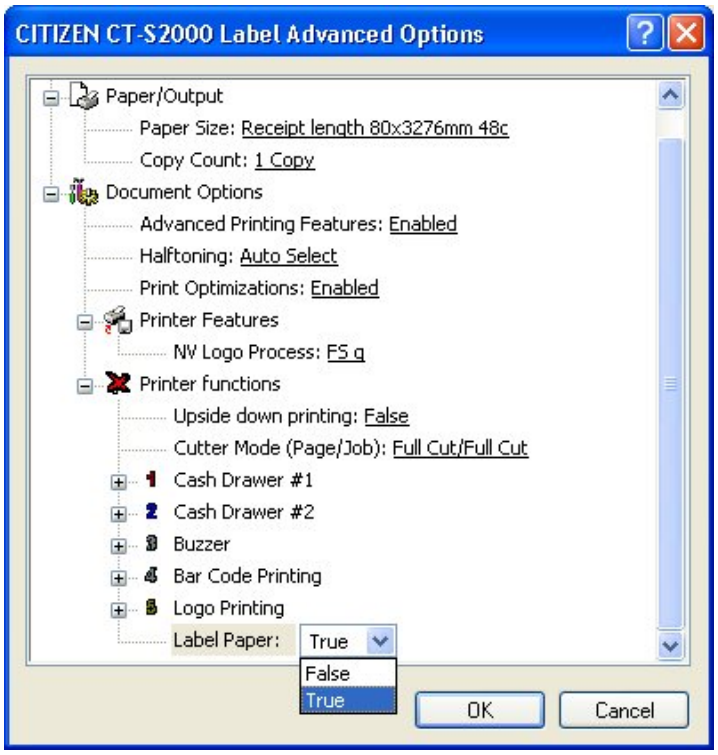


Bar Code Printing: Allows the user to change the default Human Readable Interpretation (HRI) positioning. The HRI can be added to the top, bottom or top and bottom of the barcode.



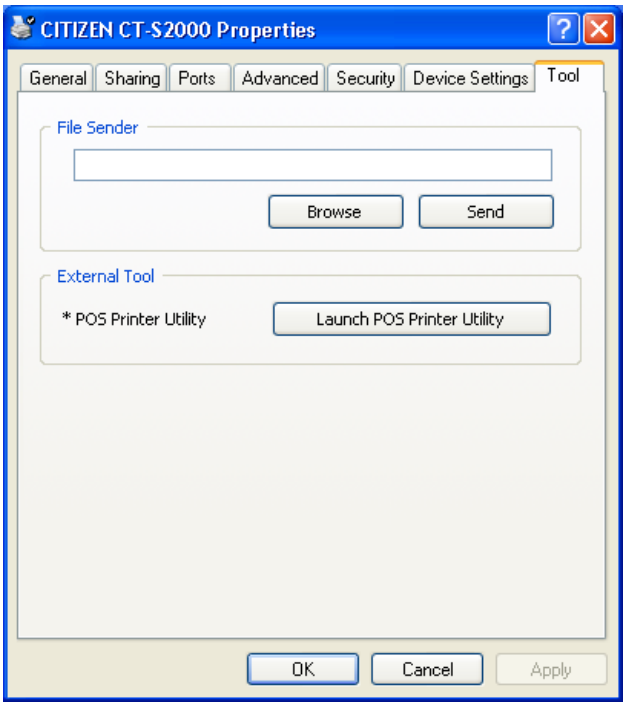
Logo Printing: Allows the user to select when and which logos should be printed. Logo data must be first to 5th data in the NV memory and it can be printed in 6 positions (top of first paper, bottom of first page, top of middle page, bottom of middle page, top of last page and bottom of last page)





Label paper: Allows the user to select to enable/disable for label or black mark function. This is only for the driver with Black mark or label function

5-2 Tool tab



File sender: You can send the data file to printer by this function.

External Too: If the software “POS Printer Utility” is installed, this item shows up on this tab. The software can be started from the button. If the software is installed after driver installation, this button is also shown.

5-3 Other tab

The items not explained above are basically not necessary to change.
If you change those items, please change it at your own risk.

6. Printer fonts

Following printer fonts can be selected by using Windows driver.

Printing by printer font is much faster than printing by Windows font. Therefore, we recommend using these printer fonts for faster printing.

Driver	Font		Font size
CBM1000II CT-S2000 CT-S280 CT-S281 CT-S300 CT-S310 CT-S4000 PMU2xxx PPU-700 BD2-222x	15 cpi 15 cpi [Euro] 15 cpi [Ext.] 15 cpi [RED Euro] 15 cpi [RED Ext.] 15 cpi (RED) 7.5 cpi 7.5 cpi [Euro] 7.5 cpi [Ext.] 7.5 cpi [RED Euro] 7.5 cpi [RED Ext.] 7.5 cpi (RED) 3.75 cpi 3.75 cpi [Euro] 3.75 cpi [Ext.] 3.75 cpi [RED Euro] 3.75 cpi [RED Ext.] 3.75 cpi (RED) 1.8 cpi 1.8 cpi [Euro] 1.8 cpi [Ext.] 1.8 cpi [RED Euro] 1.8 cpi [RED Ext.] 1.8 cpi (RED)	Font A	12 / 24 / 36 / 48 / 60 / 72 / 80
	20 cpi 20 cpi [Euro] 20 cpi [Ext.] 20 cpi [RED Euro] 20 cpi [RED Ext.] 20 cpi (RED) 10 cpi 10 cpi [Euro] 10 cpi [Ext.] 10 cpi [RED Euro] 10 cpi [RED Ext.] 10 cpi (RED) 5 cpi 5 cpi [Euro] 5 cpi [Ext.] 5 cpi [RED Euro] 5 cpi [RED Ext.] 5 cpi (RED) 2.5 cpi 2.5 cpi [Euro] 2.5 cpi [Ext.] 2.5 cpi [RED Euro] 2.5 cpi [RED Ext.] 2.5 cpi (RED)	Font B	

	25 cpi 25 cpi [Euro] 25 cpi [Ext.] 25 cpi [RED Euro] 25 cpi [RED Ext.] 25 cpi (RED) 12.5 cpi 12.5 cpi [Euro] 12.5 cpi [Ext.] 12.5 cpi [RED Euro] 12.5 cpi [RED Ext.] 12.5 cpi (RED) 6.25 cpi 6.25 cpi [Euro] 6.25 cpi [Ext.] 6.25 cpi [RED Euro] 6.25 cpi [RED Ext.] 6.25 cpi (RED) 3 cpi 3 cpi [Euro] 3 cpi [Ext.] 3 cpi [RED Euro] 3 cpi [RED Ext.] 3 cpi (RED)	Font C (Not supported on CBM1000II)	
CBM1000II CT-S2000 CT-S280 CT-S281 CT-S300 CT-S310 CT-S4000 PMU2xxx PPU-700 BD2-222x	FontA11 FontA11 [255] FontA11 [Ext.]	Font A	9.5
	FontA12 FontA12 [255] FontA12 [Ext.]		19
	FontA21 FontA21 [255] FontA21 [Ext.]		9.5
	FontA22 FontA22 [255] FontA22 [Ext.]		19
	FontA24 FontA24 [255] FontA24 [Ext.]		38.5
	FontA42 FontA42 [255] FontA42 [Ext.]		19
	FontA44 FontA44 [255] FontA44 [Ext.]		38.5
	FontA48 FontA48 [255] FontA48 [Ext.]		77
	FontA84 FontA84 [255] FontA84 [Ext.]		38.5
	FontA88 FontA88 [255] FontA88 [Ext.]		77

	FontB11 FontB11 [255] FontB11 [Ext.]	Font B	7 (CT-S3x0/PPU-700) 9.5 (Other models)
	FontB12 FontB12 [255] FontB12 [Ext.]		13.5 (CT-S3x0/PPU-700) 19 (Other models)
	FontB21 FontB21 [255] FontB21 [Ext.]		7 (CT-S3x0/PPU-700) 9.5 (Other models)
	FontB22 FontB22 [255] FontB22 [Ext.]		13.5 (CT-S3x0/PPU-700) 19 (Other models)
	FontB24 FontB24 [255] FontB24 [Ext.]		27 (CT-S3x0/PPU-700) 38.5 (Other models)
	FontB42 FontB42 [255] FontB42 [Ext.]		13.5 (CT-S3x0/PPU-700) 19 (Other models)
	FontB44 FontB44 [255] FontB44 [Ext.]		27 (CT-S3x0/PPU-700) 38.5 (Other models)
	FontB48 FontB48 [255] FontB48 [Ext.]		54.5 (CT-S3x0/PPU-700) 77 (Other models)
	FontB84 FontB84 [255] FontB84 [Ext.]		27 (CT-S3x0/PPU-700) 38.5 (Other models)
	FontB88 FontB88 [255] FontB88 [Ext.]		54.5 (CT-S3x0/PPU-700) 77 (Other models)
	Control		12
CD-S500 series	16 cpi 16 cpi [Euro] 16 cpi [Ext.] 16 cpi [RED Euro] 16 cpi [RED Ext.] 16 cpi (RED) 8 cpi 8 cpi [Euro] 8 cpi [Ext.] 8 cpi [RED Euro] 8 cpi [RED Ext.] 8 cpi (RED)	7x9 dot	12 / 24 / 36 / 48 / 60 / 72 / 80
	12 cpi 12 cpi [Euro] 12 cpi [Ext.] 12 cpi [RED Euro] 12 cpi [RED Ext.] 12 cpi (RED) 6 cpi 6 cpi [Euro] 6 cpi [Ext.] 6 cpi [RED Euro] 6 cpi [RED Ext.] 6 cpi (RED)	9x9 dot	

	FontA11 FontA11 [255]	7x9 dot	9
	FontA12 FontA12 [255]		18
	FontA21 FontA21 [255]		9
	FontA22 FontA22 [255]		18
	FontB11 FontB11 [255]	9x9 dot	9
	FontB12 FontB12 [255]		18
	FontB21 FontB21 [255]		9
	FontB22 FontB22 [255]		18
	Control		12

[Note]

* The difference of "**xx cpi**", "**xx cpi [Euro]**" and "**xx cpi [Ext.]**" is characters/functions assigned to 80 ~ FF hex. The details of difference are as follows.

Font	80-9F(hex)	A0-FF(hex)
xxx cpi	Special function	WPC1252
xxx cpi [Euro]	WPC1252	
xxx cpi [Ext.]	Code Page 437	

Special function: Special functions are assigned. (Refer to section 9 for the special functions.)

Windows Code: Characters from Windows code table are assigned.

Code Page 437: Characters from code page 437 are assigned.

* "xx cpi" font: If the number is smaller, character width is larger. 4 different size (Standard size, x2/x4/x8 width) can be chosen from each font.. For example, "7.5 cpi" is double width font of "15 cpi".
* "xx cpi" font: Font size mean the height of character. Standard size is 12.
  For example, Font size 24 is double high font of font size 12.
* "FontAxx(Bxx)" font: xx means size of height and width.
  For example, FontA48 is based on font A and 4 times high and 8 times wide from standard size.
* FontAxx(Bxx)[255] font uses downloaded font by user
* Line pitch by "xx cpi" and by "FontAxx (FontBxx)" are different because the font size is different.
* It is possible to print 2colors by using font name with (RED). Normally two colors are black and red.
  The requirement to print 2 colors are CD-S500 Black/Red ribbon cassette
  CT-S28x, CBM1000II 2 color thermal paper
  Other CT-Sxxxx PMU2xxx PPU-700 BD2-222x 2 color thermal paper and setting for 2 color mode
* If landscape (horizontal) orientation is selected, these fonts will not be printed.
* "Control" font is only for special functions and not for printing.
* The function of centering or right aligning by application software does not work with the driver.
* If the print data for printer font is longer than one line, extra part is basically ignored but in some case, one character may be printed in next line. Please do not send the longer data than one line.

7. Barcode

Using following barcode font can print barcode.

Barcode font	Font size	Applicable driver
Codabar	20 / 40 / 42 / 60 / 64 / 80 / 84	All thermal printers
Code128	20 / 40 / 42 / 60 / 64 / 80 / 84	All thermal printers
Code39	20 / 40 / 42 / 60 / 64 / 80 / 84	All thermal printers
Code93	20 / 40 / 42 / 60 / 64 / 80 / 84	All thermal printers
JAN13 (EAN)	20 / 40 / 42 / 60 / 64 / 80 / 84	All thermal printers
JAN8 (EAN)	20 / 40 / 42 / 60 / 64 / 80 / 84	All thermal printers
ITF	20 / 40 / 42 / 60 / 64 / 80 / 84	All thermal printers
UPC-A	20 / 40 / 42 / 60 / 64 / 80 / 84	All thermal printers
UPC-E	20 / 40 / 42 / 60 / 64 / 80 / 84	All thermal printers

[Note]

* Size of barcode can be selected by choosing font size.
* HRI characters can be added by selecting in the UI or by using the control font.
* Each barcode has limitation of characters to use. Please refer to the user's manual for the details of limitations.
* These fonts will not be shown correctly.
* The wider barcode than paper width cannot be printed.
* The sub code set type A/B/C for Code128 should be specified as {A, {B, {C prior to the print data.
* The data for sub code set C of Code128 is printed in decimal address of the input character.
  For example, Input data "1" => Output 49 ("1" address = 31h = 49dec)
* Printer font and barcode cannot be printed in the same line.
* The function of centering or right aligning by application software does not work with the driver.
* Barcode font is not shown correctly on the application software such as MS-Word.
* In the font name of "JAN13 (EAN)" and "JAN8 (EAN)", a space is included before the " (".

8. Graphic printing function

Following printer drivers support graphic printing.

Windows fonts (TrueType fonts) can be printed by these drivers as well.

The resolution of each printer is as follows.

		Resolution (DPI)
CD-S500 series	High quality	144 x 144
	Standard	144 x 72
	Draft	72 x 72
Thermal Printers		203 x 203

Remarks

If the long size graphic data is printed with the horizontal paper orientation, a gap about 1mm may be generated.

Please note that serial interface is not adequate for graphic printing because of its slow communication speed.

9. Special functions

To use special function of printer, it is necessary to send specified character in “Control” font or to send specified character in “xx cpi“ font. Both “xx cpi [Euro]”, “xx cpi [Ext.]” font.

Windows font (TrueType font) does not work for the special functions.

Model	Printer Function	“Control”		“xx cpi”
		ASCII Character	Hex Value	Hex Value
All drawer models	50ms pulse to drawer #1	A	41	81
All drawer models	100ms pulse to drawer #1	B	42	82
All drawer models	150ms pulse to drawer #1	C	43	83
All drawer models	200ms pulse to drawer #1	D	44	84
All drawer models	250ms pulse to drawer #1	E	45	85
All drawer models	50ms pulse to drawer #2	a	61	89
All drawer models	100ms pulse to drawer #2	b	62	8A
All drawer models	150ms pulse to drawer #2	c	63	8B
All drawer models	200ms pulse to drawer #2	d	64	8C
All drawer models	250ms pulse to drawer #2	e	65	8D
All Models	Horizontal Tab (HT)	5	35	95
All Models	Line Feed (LF)	6	36	96
All Models	Carriage Return (CR)	7	37	97
All cutter models	Receipt paper Full Cut	F	46	9D
All cutter models	Receipt paper Partial Cut	P	50	9E
All Models	NV Bitmap data ID:1 Normal printing	G	47	
All Models	NV Bitmap data ID:2 Normal printing	H	48	
All Models	NV Bitmap data ID:3 Normal printing	I	49	
All Models	NV Bitmap data ID:4 Normal printing	J	4A	
All Models	NV Bitmap data ID:5 Normal printing	K	4B	
All Models	NV Bitmap data ID:1 Double Width printing	Q	51	
All Models	NV Bitmap data ID:2 Double Width printing	R	52	
All Models	NV Bitmap data ID:3 Double Width printing	S	53	
All Models	NV Bitmap data ID:4 Double Width printing	T	54	
All Models	NV Bitmap data ID:5 Double Width printing	U	55	
All Models	NV Bitmap data ID:1 Double Height printing	V	56	
All Models	NV Bitmap data ID:2 Double Height printing	W	57	
All Models	NV Bitmap data ID:3 Double Height printing	X	58	
All Models	NV Bitmap data ID:4 Double Height printing	Y	59	
All Models	NV Bitmap data ID:5 Double Height printing	Z	5A	
All Models	NV Bitmap data ID:1 Quadruple printing	[	5B	
All Models	NV Bitmap data ID:2 Quadruple printing	}	5D	
All Models	NV Bitmap data ID:3 Quadruple printing	^	5E	
All Models	NV Bitmap data ID:4 Quadruple printing	_	5F	
All Models	NV Bitmap data ID:5 Quadruple printing	`	60	

Remarks: Depending on the printer’s specification and setting, not all the function work.

10. Paper sizes

A) Length

Followings paper length can be chosen.

	Paper length
a)	A4 length (297 mm)
b)	B5 length (257 mm)
c)	6 in Page (6 in)
d)	Letter length (11 in)
e)	Executive length (10.5 in)
f)	Receipt (3240 mm) *** This is default setting
g)	User-Defined size

[Note]

Size a – f,) Printing will stop before the specified length if the print data is finished before reaching end of the page. If the print data is more than specified length, the printer will cut on paper length that pre-set. 3240mm length cannot be used from MS-Word and MS-ACCESS.

(Exception: Ticket is set for Paper Type in driver property and CT-S4000 Compress driver In these cases, the length of printed paper is fixed for the selected paper length.)

Size g) User can set the paper length.

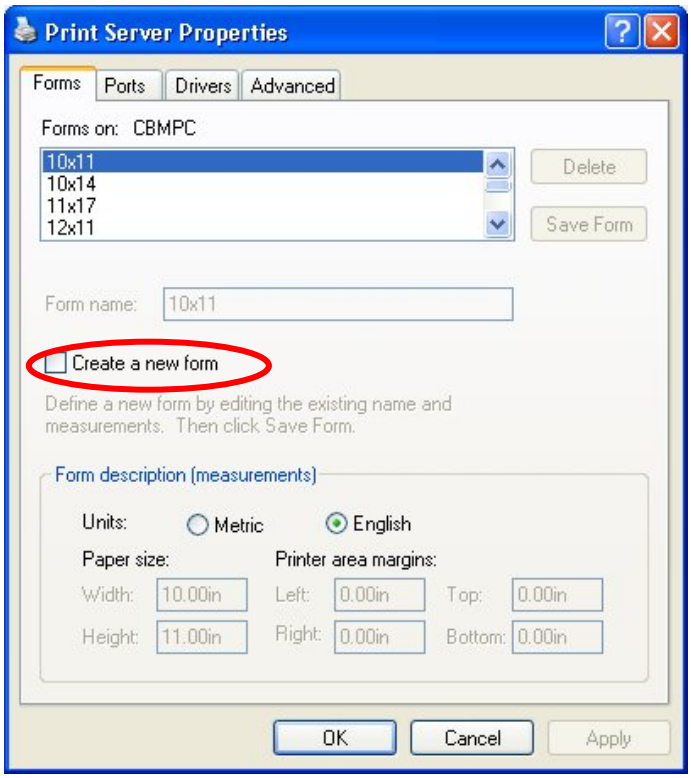
Please make custom form as follows.

Then from menu of “Printer and Faxes” window,

File -> Server Properties

Then check “Create A New Form” on Form tab and enter the settings for the new form.

And click “Save Form” or OK.



B) Width

Paper width depends on the printer and the setting.

Model	Paper width
CBM1000II	80mm(48col.) 80mm(42col.) 58mm(36col.) 58mm(30col.)
CT-S2000	83mm (53col.) 80mm (48col.) 80mm (42col.) 58/60mm (36col.) 58mm(30col.)
CT-S280(281)	58mm(32col.) 58mm(30col.)
CT-S300(310)	80mm(48col.) 80mm(42col.) 58mm(32col.) 58mm(30col.)
CT-S4000	112mm(69col.) *1 83mm(55col) 80mm(48col) 80mm(42col)
PMU2xxx	80mm(48col.) 80mm(42col) 58mm(32col) 58mm(30col)
PPU-700	80mm(48col.) *1 80mm(42col) 58mm(32col) 58mm(30col)
CD-S500 series	76mm 69.5mm 58.5mm
BD2-2220/2221	80mm(48col) 80mm(42col) 58mm(36col) 58mm(32col)

*1 Printer supports more paper width. For other paper width, use need to define the paper size.

11. Example of usage by Microsoft Word

This is the sample to use printer font on MS-Word.

From the menu, click

File--> Print --> Printer Name

Choose the printer to use then click Close button. Then

File --> Page setting --> Paper size

Choose the paper size to use. Then

File --> Page setting --> Margin

Set the proper margins. (If you set the margins to zero, it will be corrected to minimum number automatically after the error message.)

Choose the printer font in the font list box

Choose the printer font size 12 or 24 in the font size list box.

Step from here is important.

Make the print data ready and from the menu, click

Tool --> Option --> Compatibility

Then choose “Microsoft Word 6.0/95”. Then

File --> Print --> OK

If you skip this step shown in red, the data is either printed in graphics or printer just feed few empty lines.

12. Example of program by Visual Basic

Following program list is for “CITIZEN CT-S2000”.

```
‘Set “CITIZEN CT-S2000“ as default printer driver
Dim X As Printer
For Each X In Printers
      If X.DeviceName = “CTIZEN CT-S2000” Then
            Set Printer = X
            Exit For
      End If
Next

‘Printing Windows font”
Printer.FontSize=10
Printer.FontName=”Ariel”
Printer.Print “Font Ariel / Size 10”

‘Printing Printer font
Printer.FontSize=12
Printer.FontName=”15 cpi”
Printer.Print “15 cpi / Size 12”

‘Printing Barcode
Printer.FontSize=20
Printer.FontName=”Code39”
Printer.Print “ABC123456”

‘Opening cash drawer
Printer.FontSize=12
Printer.FontName=”Control”
Printer.Print “A”    ‘Drawer 1 at 50ms

‘Cutting paper”
Printer.FontSize=12
Printer.FontName=”Control”
Printer.print “P”    ‘Partial cut

‘Printing graphic data from NV memory
Printer.FontSize=12
Printer.FontName=”Control”
Printer.print “G”    ‘Print #1 graphic data in NV memory

Printer.EndDoc
```

Also you can send commands through driver but it is necessary to choose printer font first.
(Please use this way at your own risk. We do not recommend this usage.)

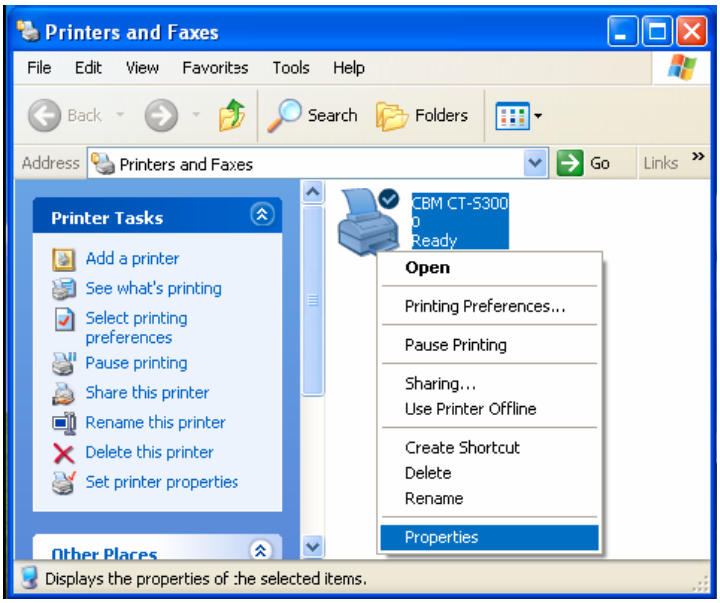
```
Printer.FontSize=12
Printer.FontName=”15 cpi”
Printer.Print CHR$(&H1B) + “V” + CHR$(1)    ‘90 degrees right turned.
Printer.Print “15 cpi / Size 12”
Printer.EndDoc
```

Caution: PrintDocument object of Visual Basic.Net etc does not support printer font. Therefore the above method using printer font cannot be used.

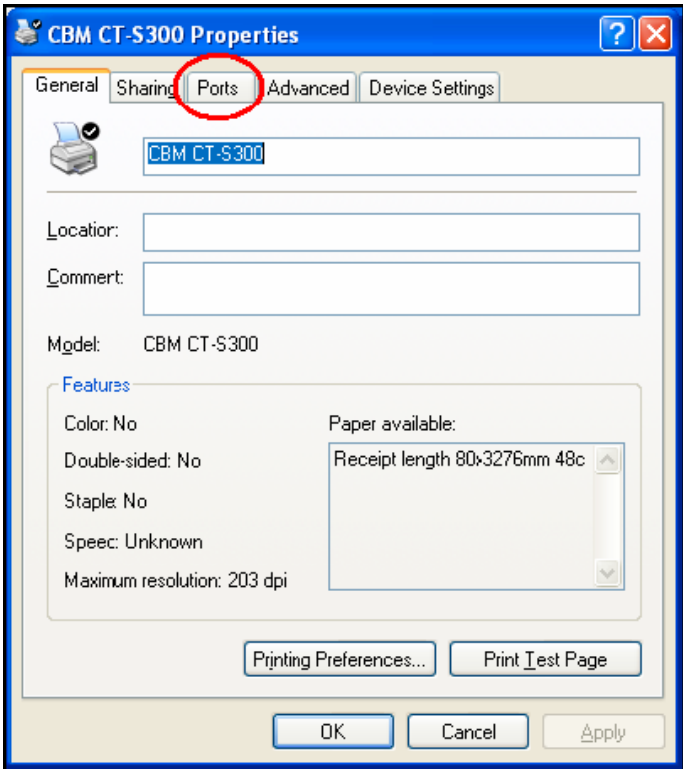
Addendum 1. Serial Port Settings

The serial port settings on both the printer and Windows need to match. To check the current port settings on the printer please run a printer self test. The printer will run a self test by holding down the feed key while turning the printer on. To change the settings on the printer, please consult the printer's users manual. You can follow the steps below to change the port settings for the driver.

To change the baud rate settings from the printer driver, right click on the printer icon and select "Properties".

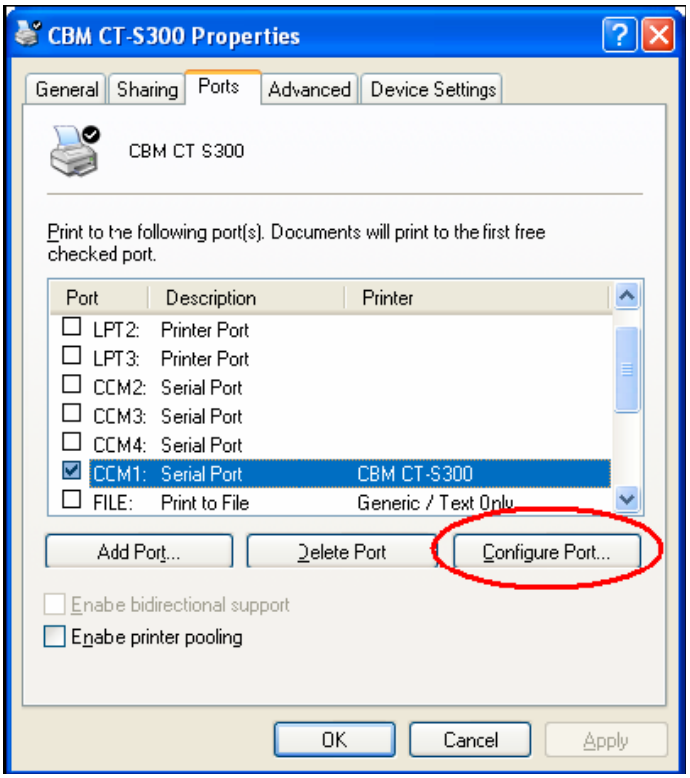


Then select the "Ports" tab.

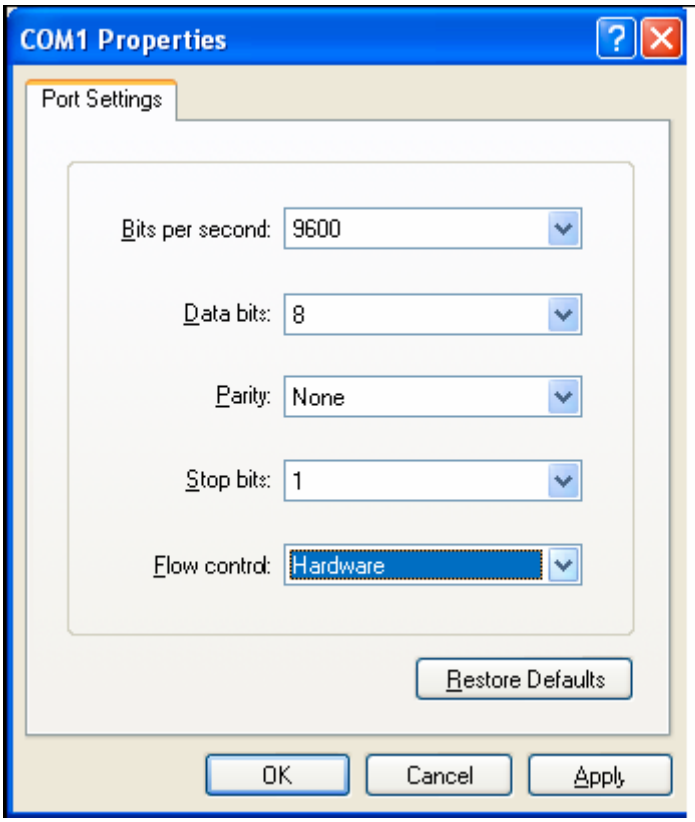


Then press the “Configure Port…” button.

Please configure the port setting from device manger on Vista.



The COM Properties dialog will pop up and you
can select the correct setting for your printer based on the self test. If the printer Handshake is
set to DTR/DSR then use “Hardware” for Flow Control on PC. When done press the “Apply” button and then the OK button.



Addendum 2. USB port

Once a USB port is used for driver installation, please do not use other USB port. If other USB port is used, it may not be possible to print. In that case, it may be necessary to change USB port of printer driver or install the driver again.